

**In the claims:**

1-66. (canceled)

67. (previously presented) A method for diagnosis comprising:

- a) obtaining a sample from a subject;
- b) measuring a concentration of at least two kynurenine metabolites in said sample;
- c) comparing said concentrations of said at least two kynurenine metabolites to corresponding reference concentrations of said at least two kynurenine metabolites; and
- d) diagnosing a medical condition based on results of said comparing.

wherein said medical condition is related to epilepsy.

68. (amended) The method of claim 1 67, wherein said at least two metabolites are selected from a group consisting of neuroprotective metabolites and neurotoxic metabolites.

69. (amended) The method of claim 2 68, wherein said group consists of TRP (tryptophan), KYN (kynurenine), 3HOKYN (3-hydroxykynurenine), AA (anthranilic acid), 3HOAA (3-hydroxyanthranilic acid), KA (kynurenic acid) and QUIN (quinolinic acid).

70. (amended) The method of claim 2 68 wherein a first metabolite selected is a neuroprotective metabolite and a second metabolite selected is a neurotoxic metabolite.

71. (amended) The method of claim 4 70 wherein said first metabolite is KA (kynurenic acid) and said second metabolite is 3HOAA (3-hydroxyanthranilic acid).

72. (withdrawn – currently amended) The method of claim 4 70 wherein said first metabolite is AA (anthranilic acid) and said second metabolite is 3HOAA (3-hydroxyanthranilic acid).

73. (amended) The method of claim 4 70 wherein said first metabolite is KA (kynurenic acid) and said second metabolite is QUIN (quinolinic acid).

74. (cancelled)

75. (amended) The method of claim & 74 67 wherein said medical condition is epilepsy.

76. (amended) The method of claim & 74 67 wherein said medical condition is a predisposition to epilepsy.

77. (amended) The method of claim ~~40~~ 76 wherein said subject is substantially free of clinical manifestations indicative of epilepsy.

78. (amended) The method of claim ~~4~~ 67 wherein said corresponding reference concentrations are metabolite concentrations of an individual without said medical condition.

79. (amended) The method of claim ~~4~~ 67 wherein said corresponding reference concentrations are metabolite concentrations of an individual with said medical condition.

80. (amended) The method of claim ~~4~~ 67 wherein said corresponding reference concentrations are metabolite concentrations of an epileptic.

81. (amended) The method of claim ~~4~~ 67 wherein said comparing comprises

- i) determining a first ratio, being a ratio of two of said determined metabolite concentrations;
- ii) determining a second ratio, being a ratio of two of said corresponding reference concentrations; and
- iii) comparing said first ratio to said second ratio.

82. (amended) The method of claim 4 67 wherein said comparing comprises

- i) defining a function, said function being dependent on metabolite concentrations;
- ii) determining a first value, said first value determined by a value of said function at said determined metabolite concentrations;
- iii) determining a second value, said second value determined by a value of said function at said corresponding reference concentrations; and
- iv) comparing said first value to said second value.

83. (amended) The method of claim 16 82 wherein said function is selected from the group comprising:

$$\begin{aligned} & ([KA][3HOKYN])/([KYN][3HOAA]) \\ & ([KA] + [AA]) / [3HOAA] ; \\ & [3HOAA] / [3HOKYN]; \\ & [KA] / ([3HOAA][TRP]); \text{ and} \\ & ([KA] + [AA]) / ([3HOAA][TRP]). \end{aligned}$$

84. (amended) The method of claim 4 67, further comprising:

- e) determining an amount of an anti-epileptic drug in the subject; and
- wherein said diagnosing of said medical condition is further based on said determined amount of said anti-epileptic drug.

85. (amended) The method of claim 19 84 wherein said determining said amount of said ~~AED~~ anti-epileptic drug comprises measuring a concentration of said ~~AED~~ anti-epileptic drug in said sample.

86. (amended) The method of claim 19 84 wherein said determining said amount of said ~~AED~~ anti-epileptic drug comprises noting a dosage of said ~~AED~~ anti-epileptic drug given to said subject.

87. (amended) The method of claim 19 84 wherein said medical condition is an

individual reaction to an anti-epileptic drug.

88. (amended) The method of claim ~~22~~ 87, further comprising:

- (f) adjusting a treatment regimen of said subject based on said diagnosing of said medical condition.

89. (amended) A system for diagnosis comprising:

- a) a sample taken from a subject; and
- b) a device configured to:
  - i) measure a concentration of at least two kynurenine metabolites in said sample; and
  - ii) compare said concentrations of said at least two kynurenine metabolites to corresponding reference concentrations of said at least two kynurenine metabolites.

90. (amended) The system of claim ~~24~~ 89 wherein at least one of said at least two kynurenine metabolites is a neurotoxic metabolite and at least one of said at least two kynurenine metabolites is a neuroprotective metabolite.

91. (amended) The system of claim ~~24~~ 89 wherein said device is configured to compare said concentrations by:

- ~~a-ii.1.~~ determining a first ratio, being a ratio of said measured metabolite concentrations;
- ~~b-ii.2.~~ determining a second ratio, being a ratio of said corresponding reference concentrations; and
- ~~c-ii.3.~~ comparing said first ratio to said second ratio.

92. (amended) The system of claim ~~24~~ 89 wherein said device is further configured to:

- iii) display a possible diagnosis of a medical condition based on results of said comparing.

93. (amended) The ~~method~~ system of claim ~~27~~ 92 wherein said medical condition is

related to epilepsy.